FINAL PHASE III RI

VOLUME II APPENDIX A

DRAKE CHEMICAL SITE LOCK HAVEN, PENNSYLVANIA

AUGUST 1988 W.A. NO. 123-3L31 FINAL

PHASE III RI

VOLUME II APPENDIX A

DRAKE CHEMICAL SITE LOCK HAVEN, PENNSYLVANIA

EPA WORK ASSIGNMENT NUMBER 123-3L31 UNDER CONTRACT NUMBER 68-01-7250

> PREPARED BY: NUS CORPORATION PITTSBURGH, PENNSYLVANIA

APPROVED BY: EBASCO SERVICES INCORPORATED LANGHORNE, PENNSYLVANIA

PREPARED BY:

SITE MANAGER NUS CORPORATION APPROVED BY:

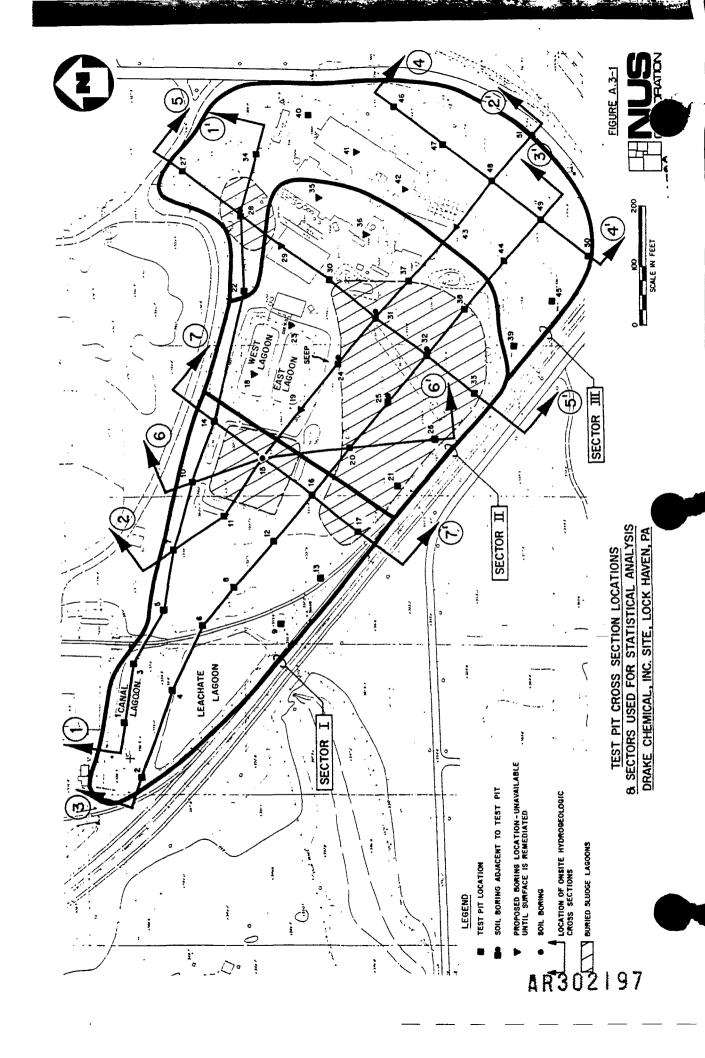
RICHARD C'EVANS, P.E. REGIONAL MANAGER, REGION III

EBASCO SERVICES INCORPORATED

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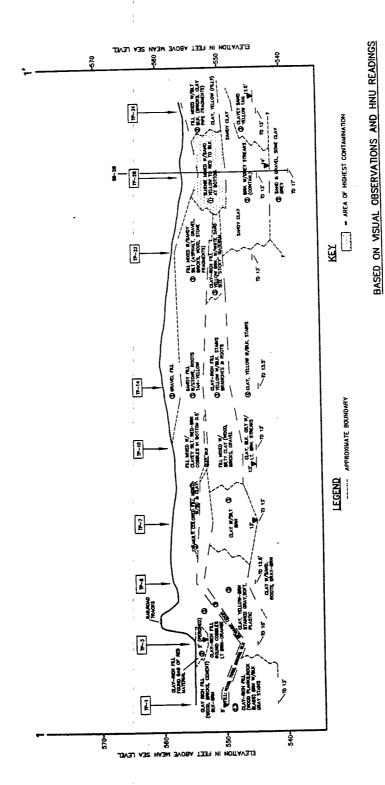
ONE OR MORE OF THE FOLLOWING ITEMS MAY BE ASSOCIATED WITH THIS DOCUMENT:

PHOTOGRAPHS DRAWINGS OVERSIZED MAPS ROLLED MAPS

AREA OF HIGHEST CONTAMINATION

AREA OF LOWEST CONTAMINATION

HYDROGEOLOGIC CROSS SECTION 1-1'
DRAKE CHEMICAL SITE
LOCK HAYEN, PA



BASED ON VISUAL OBSERVATIONS AND HNU READINGS AREA OF HIGHEST CONTAMINATION

AREA OF HIGHEST CONTAMINATION

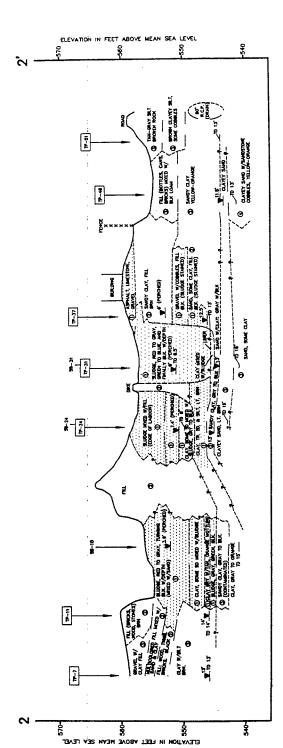
KEY

---- APPROXMATE BOUNDARY

LEGEND

AREA OF LOWEST CONTAMINATION

ACFLE: 6207\TASK05\GC2.DWG



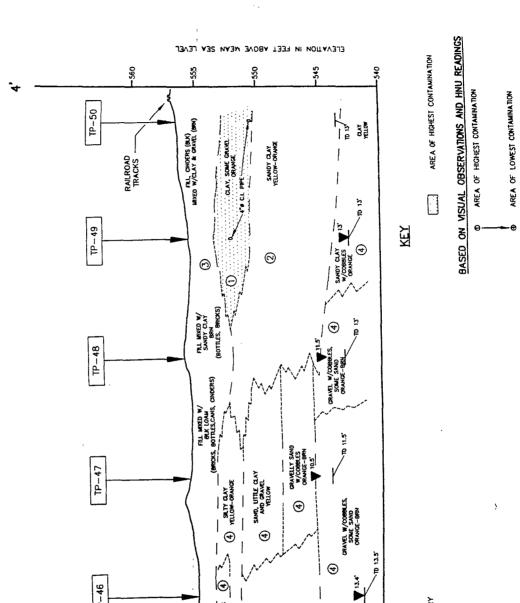
ELEVATION IN FEET ABOVE MEAN SEA LEVEL



0 100 2 HORIZONTAL SCALE IN FEET

FIGURE A.3-5





CLAYEY SILT W/BOULDERS

555

CLAY, SOME SILT ORANGE-YELLOW

550

ELEVATION IN FEET ABOVE MEAN SEA LEVEL

GLAY TELLOW

545

TP-46

2601

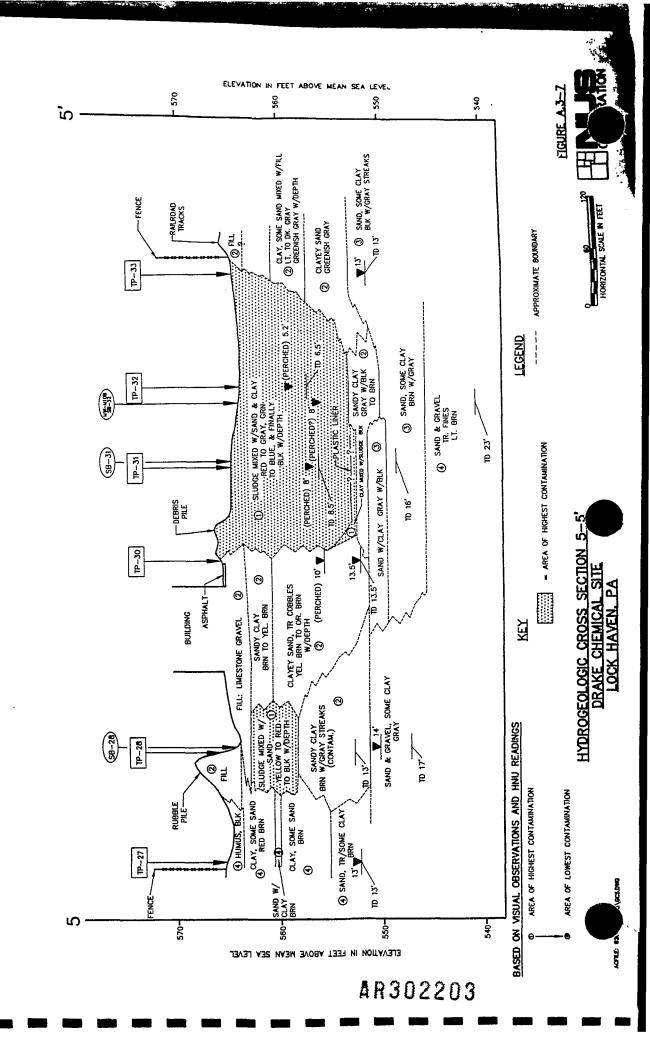
HYDROGEOLOGIC CROSS SECTION LOCK HAVEN. PA

ACPILE: 620TY\TASKOS\9CA.DWG

APPROXIMATE BOUNDARY

LEGEND

540



HYDROGEOLOGIC CROSS SECTION 6-6'
DRAKE CHEMICAL SITE
LOCK HAVEN. PA

AOTILE: 620Y\TASK05\GOS.DWG

0 50 HORZONTAL SCALE IN FEET

GLAY MOH FILL YOLDW W/BUX STANS (SEANCHES, ROOTS)

550

ELEVATION IN FEET ABOVE MEAN SEA LEVEL

0

555

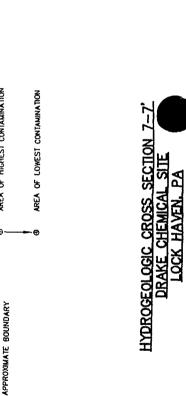
(S) Filt

560-

FENCE

(2) STUDW W/ BLK STANS

545





LEGEND

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ACTLE: GRON, TASKOB \ SCELDING

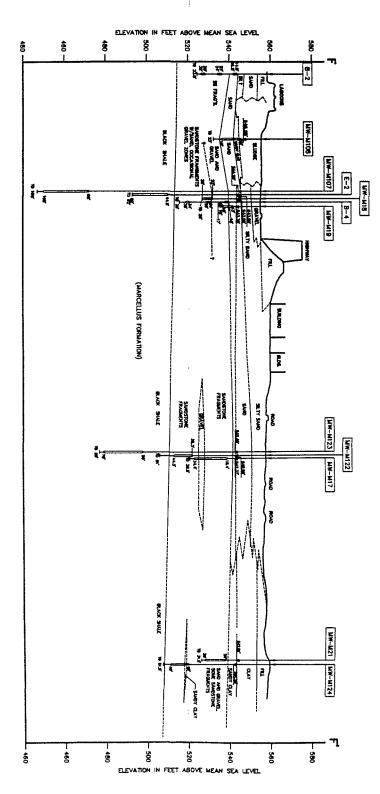
ETEVATION IN FEET ABOVE MEAN SEA LEVEL 9 9 . 260 BALD EAGLE CREEK (KEYSER/OLDPORT LIMESTONE) MW-M113 MW-12A MW-12B MW-12B GEAY SHALEY CLAYSTONE MW-M112 SETY SAND (KEYSER/OLDPORT LIMESTONE) GRAY SHALEY BR.Y LINESTONE MW-M109 Uros.5 104° SOR SET SANDSTONE SANDSTONE FRACADUTS SAND WITH in the T Same MW-M125 B-4 MW-M18 E-2 B-.50 . 20 . 20 . 20 . MW-M107 BLACK SHALEY CLAYSTONE MW-M105 106.5 ∐ 10 106.2 36 g BLACK SHALFY OF CLAYSTON E--1 (MARCELLUS FORMATION) ---- APPROXIMATE BOUNDARY FRE SAME & LEGEND 560 - MW-M101 10 M T333 HI HOITAV3.L3 8 8 1 .0€Λ 5 1 \$ 1 \$: ∧32 0 0 ŝ

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--- APPROXMATE BOUNDARY

LECEND



HYDROGEOLOGIC CROSS SECTION F-F
DRAKE CHEMICAL SITE
LOCK HAVEN. PA

AR302209



FIGURE A.3-13

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DRAWINGS
OVERSIZED MAPS
ROLLED MAPS

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NOTE: SAMPLE NO DC-SU5-105 DATE SAMPLED 10/27/87 DESCRIPTION SAMPLE NO DC-S413-113 DATE SAMPLED 10/27/87 DESCRIPTION COMPOUND SAMPLE NO DC-SU4-104 DATE SAMPLED 10/27/87 DESCRIPTION SAMPLES 1 B.2 TAKEN FROM (EAST 6 WEST) ONSIE WASTE PONDS SAMPLE 3 TAKEN FROM SOUTHERN ONSITE WASTE POND FOR DETAILED SITE FEATURES SEE FIGURE A.3-1. 232 [55) 38600 [14) [16] 144 14600 810 [116] [1120] 13700 36 0.088 733 26700 26700 1240 12500 1620 1620 7070 7070 216 [63] 39000 (163] [20] 142 14800 864 21 [899] 10500 NOSITTY SAMPLE NO DC-SU3-1034 DATE SAMPLED 10/28/87 DESCRIPTION DUPLICATE SAMPLE NO DC-SU3-103 DATE SAMPLED 10/28/87 DESCRIPTION [97] [89] 70000 666 7860 7860 11800 24 22222222 SAMPLE NO DC-SU2 102 DATE SAMPLED 10/28/87 DESCRIPTION SMIPLE NO DC-SU6-106 DATE SAMPLED 10/27/67 DESCRIPTION SAMPLE NO DC-SU9-109 DATE SAMPLED 10/27/87 DESCRIPTION 633 [36] 25700 [22] 143 12600 1580 95 [1290] 6270 71 USQUEH 10 er Memorial Airport S COMPOUND SAMPLE NO DC-SU7-107 DATE SAMPLED 10/27/87 DESCRIPTION ... > BOUNDARY SAMPLE NO DC-SW10-110
DATE SAMPLED 10/27/87
DESCRIPTION E) 697 [38] 26300 [23] 131 131 12400 1600 1600 1600 1600 1600 171 253 [353] 6520 71 *********** COMPOUND

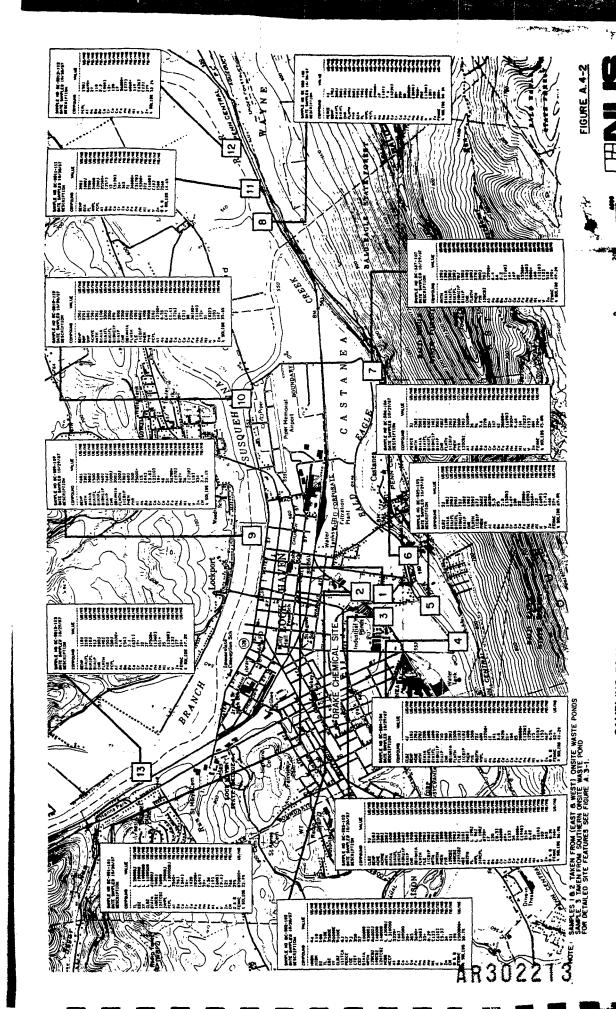
CHECK TO BE TO SAMPLE NO DC-SU1-101 DATE SAMPLED 10/28/87 DESCRIPTION SAMPLE NO DC-SUB-108 DATE SAMPLED 10/27/87 DESCRIPTION VALUE 222222222 2222222222 2222222222 SAMPLE NO DC-SU11-111
DATE SAMPLED 10/27/87
DESCRIPTION SAMPLE NO DC-SU12-112 DATE SAMPLED 10/27/87 DESCRIPTION CALUE ANNE SANT WATYNE W X X X 25.00 **888888888888888**

SOUTE MAREEL

SAMPLING RESULTS - SURFACE WATER DRAKE CHEMICAL, INC. SITE, LOCK HAY



FIGURE A.4-I



SAMPLING RESULTS—SEDIMENT DRAKE CHEMICAL, INC. SITE, LOCK HAVEN, PA

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FIGURE A.5-1 PROCESSES POSSIBLE IN CONTAMINANT MIGRATION ADVECTION (I.E. CARRIED WITH GROUNDWATER FLLOW)
 DISPERSION DUE TO MECHANICAL INIXING CATION EXCHANGE AC & C PROPERTY ADSORPTION . BIODEGRADATION · RETARDATION • DIFFUSION DRAKE PROPERTY GROUNDWATER FLOW DIRECTION

• VELOCITY IN OVERBURDEN ± 60/YR

• VELOCITY IN BEDROCK ± 6/YR F-LEACHATE LAGOON LEACHATE E RAIL BOAD TRACKS HOUTE (220) EMBANKONENT PUBLIC PROPERTY -- SLOPE # 0.35% ≈ 2000 INFILTRATION = 16 INCHES / YEAR (ANNUAL PRECIPITATION = 42.5 M.) RANDOM PERCHED WATER TABLE VEL 540 CASTANEA TWP. ARK PROPERTY VOLATILIZATION WATER TABLE , BALD EAGLE CREEK BURNED WASTE (SON, AND SLUDGE) BALD EAGLE MOUNTAIN CONTAMINATED SEDIMENT 1, x1800 FRACTURED BEDROCK AR302221

92

CONCEPTUAL CONTAMINANT MIGRATION MODEL DRAKE CHEMICAL SITE, LOCK HAVEN, PA NOT TO SCALE, NOT FOR COMPUTATIONS, PICTORIAL ONLY

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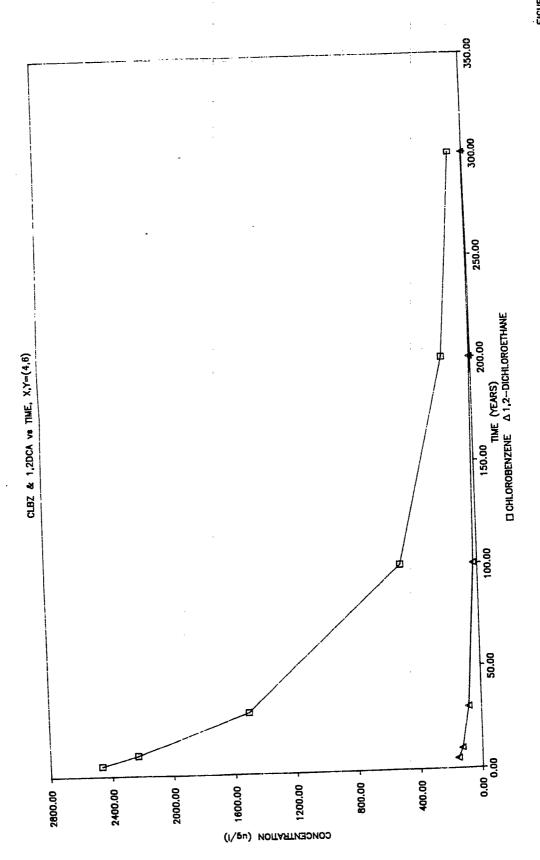
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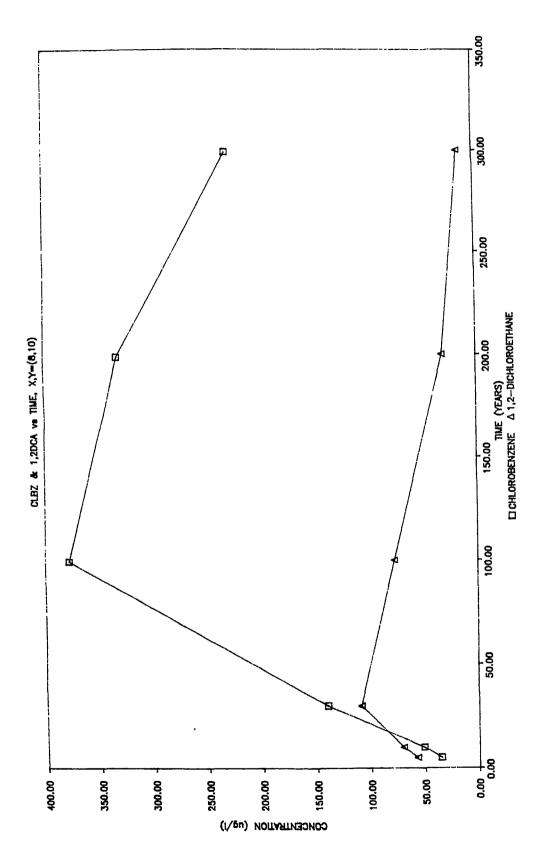
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SIMULATION RESULTS - ZONE 1 CENTRAL DRAKE CHEMICAL SITE LOCK HAVEN, PA



AR302230

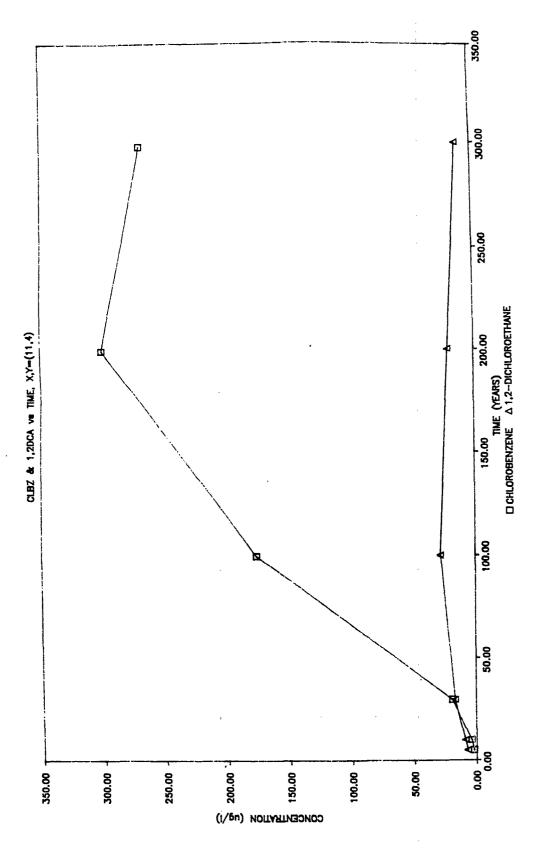


SIMULATION RESULTS - ZONE 2 SOUTHWEST

DRAKE CHEMICAL SITE

LOCK HAVEN, PA

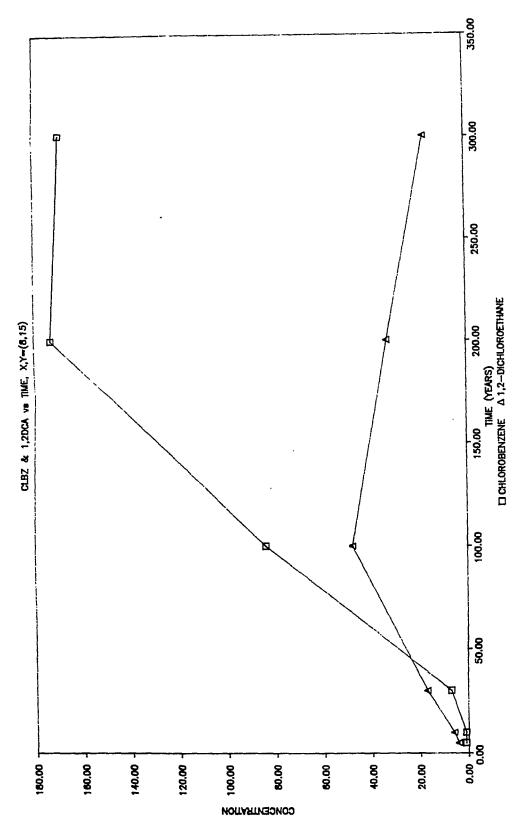
AR302231



SIMULATION RESULTS - ZONE 2 NORTHEAST

DRAKE CHEMICAL SITE

LOCK HAVEN, PA

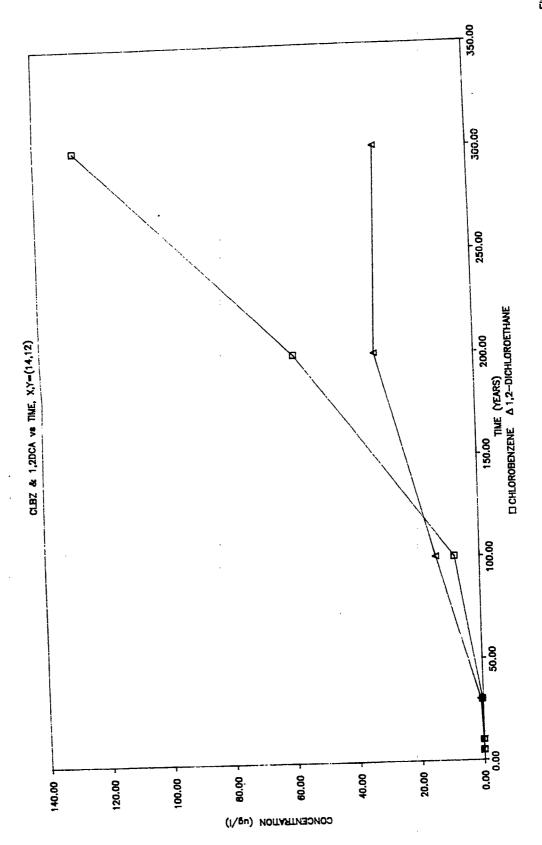


SIMULATION RESULTS - ZONE 3 SOUTHWEST

DRAKE CHEMICAL SITE

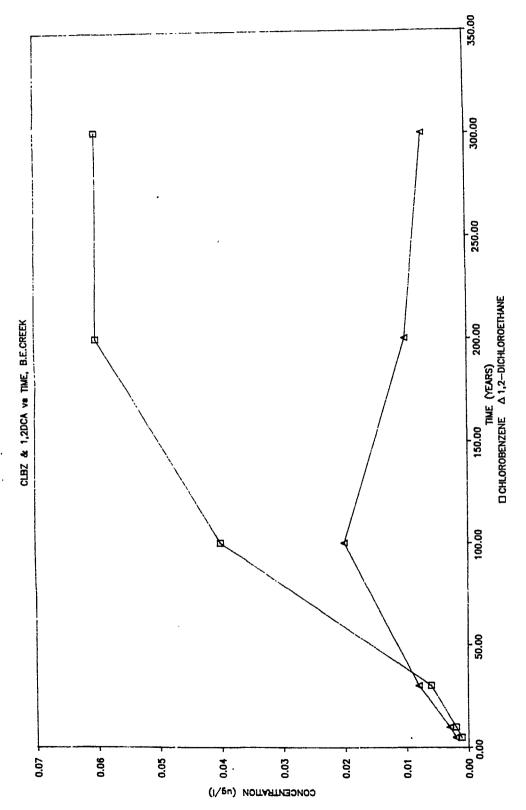
LOCK HAVEN, PA

AR302233



SIMULATION RESULTS - ZONE 3 SOUTHEAST
DRAKE CHEMICAL SITE
LOCK HAVEN, PA

AR302234



SIMULATION RESULTS - BALD EAGLE CREEK, AT CASTANEA BRIDGE

DRAKE CHEMICAL SITE LOCK HAVEN, PA